2nd 80s Fire
Deer Park, Texas
Battleship Assessment Plan
Version 1.0
Date: 05/07/2019

Approval:

Position	Name	Signature	Date
Incident Commander			
FOSC			
SOSC			

Reviewed by:

Organization	Name	Signature	Date
TPWD			

9969215

1. Introduction

This Battleship Assessment Plan was prepared by the Environmental Unit (EU) and Texas Parks and Wildlife (TPWD) to provide a plan for the assessment and cleanup of any internal and external impacts to Battleship Texas due to the materials released from the 2nd 80's Fire.

1.1. Historical Overview of Battleship Texas

From TPWD: In 1948, Battleship Texas became the nation's first permanent battleship memorial museum, and she was secured in a slip off the Houston Ship Channel adjacent to the San Jacinto Battleground State Historic Site. A veteran of both world wars, she is one-of-a-kind as the only remaining dreadnought. Over the last sixty years, Battleship Texas has been subject to continuous environmental and physical threats while resting in the shallow, brackish waters of the ship channel"[1]. "Since 2012, leaks in the ship's hull have caused periodic flooding aboard the ship"[1].

In addition to an external visual survey of released material on the hull, an internal survey is required to determine whether released material or vapors may be present inside the Battleship.

2. Assessment

2.1. Internal Assessment and Clearance

Battleship Texas has over 800 internal compartments. Cavities in the hull allow water into certain compartments inside the Battleship, specifically blister tanks and some trim tanks. Since any water that enters the vessel is circulated and pumped out, it is not anticipated that any released material would be present in any water remaining onboard. However, if released material did get into any of the tanks that are open to the environment (since the water inside the tanks have reduced over time due to pumping), there is a possibility that vapors may be present and/or residual material may adhere to the tank structure. Each accessible (non-confined space) compartment will be "cleared" through air monitoring for VOCs and/or benzene. Clearance of confined spaces shall be conducted under a separate project plan.

Access to the Battleship will be opened up to different groups in a tiered process in accordance with the following:

Tier	Groups	Requirements for access
1	Staff returning to offices onboard	• Cleared work spaces (air monitoring)
2	Volunteers returning to the park	• Independence Highway open • Lynchburg Ferry Open • Functional wastewater treatment system (TPWD)
3	General public	• Cleared tour routes (air monitoring)
4	Special groups, including overnight programs, hard hat tours	• Cleared overnight program spaces (24-hr air monitoring and sampling) • Cleared accessible (non-confined space) spaces
5	Employee and contractor access to confined spaces, including blister tanks.	• Cleared confined spaces (conducted under a separate confined space project plan)

[1] https://tpwd.texas.gov/state-parks/parks/battleship-texas-dry-berth-project

2.1.1.Clearance of accessible (non-confined space) compartments

Air Monitoring and Sampling shall be conducted by CTEH with TPWD in accordance with the methodology outlined in the Unified Command (UC)-approved Work Area Sampling and Analysis Plan. To begin assessing air quality aboard Battleship Texas following the 2nd 80's Tank Fire, two sets of criteria have been established to ensure the health and safety of both workers and the public reentering the battleship. The first set of criteria are action levels for workers performing early reentry while conducting real-time air monitoring inside accessible compartments aboard Battleship Texas (Attachment A, Table A-1). These criteria will also be used for staff returning to offices onboard. The second set of criteria (Table A-2) are based on acute Minimal Risk Levels (MRLs), which are health-based screening levels developed by USEPA for protection of the general public and special groups that may remain onboard for longer than 8 hours (i.e. overnight).

In order for the air monitoring requirements to be met for Tiers 1-4, all accessible compartments must have real-time air monitoring data documenting that VOCs and/or benzene were below the metrics in Table A-2. Results from a 24-hour Analytical Air Sampling period will validate the real-time air monitoring data and further characterize two areas associated with the overnight program onboard Battleship Texas. In addition, ambient air samples will be collected for comparison to onboard area samples.

CTEH will record air monitoring readings in a database and associate each reading with the compartment where it was collected, if applicable. CTEH will present the collected data in a summary report.

2.1.2. Clearance of confined space compartments

Confined spaces (i.e. Tier 5 access) on board the Battleship shall be assessed under a separate project plan.

2.2 External assessment

An external assessment of the hull, mono-piles and berthing area will be conducted to document observations of released material, foam, or sheen on the structures or in the adjacent waters. This survey shall be conducted as a Special Shoreline Cleanup Assessment Technique (S-SCAT) mission, with participants representing ITC, EPA (USCG), and TPWD, including Battleship personnel.

The SCAT methodology shall be used for observation and documentation related to the berth, monopiles and battleship itself (See UC-Approved SCAT Plan). A standard SCAT form will be used to characterize oiling on and around the battleship. Given the unique nature of this SCAT mission these forms will be supplemented with a written narrative and photography.

Endpoints for solid manmade materials within San Jacinto State Park have been recommended and approved by UC and TWPD in the SCAT plan (reproduced below).

SCAT Plan endpoints for San Jacinto State Park (high public use areas):	• No greater than Stain (cannot be scraped off with a fingernail) at 10% distribution. • No readily accessible oiled debris (unoiled debris should not be removed) • Does not release a sheen that affects sensitive areas or wildlife.

If endpoints are not met, treatment methods shall be considered by the SCAT team during the assessment survey. The UC-approved treatment methods for San Jacinto State Park are reproduced below, however due to the age and condition of the vessel, recommended cleanup techniques are limited to non-invasive methods, which are in **bold and underlined** in the table below. If endpoints are not met, then passive cleanup methods such as use of sorbents may be preferred.

SCAT plan treatment methods for San Jacinto State Park	• **Washing / flushing with low pressure, ambient water** o **Containment boom and sorbents will be deployed to contain and recover released material;** o **For application on small objects, sorbents can be placed around and below the object for recovery to prevent fouling of the surrounding area** o High pressure and/or hot water washing may be permitted on segments with high public use with prior EU approval o The use of Surface Washing Agents is not permitted without approval of the Unified Command. • **Manual removal by** scraping or **wiping with sorbents.** • **Manual removal of oiled debris.** • **Deployment of sorbents to passively recover material released by natural processes.**

3. Cleanup

If internal and/or external endpoints are not met, a Cleanup Plan will be developed with TPWD. Consideration shall be given to the sensitivity of the vessel to available cleanup techniques.

4. Closure

Once endpoints are met, or No Further Treatment (NFT) is recommended due to the sensitivity of the vessel, then documentation of the internal clearance and external SCAT surveys shall be provided to UC and TWPD for sign off and closure.

Attachment A: Air Monitoring Tables

Table A-1 Battleship Air Monitoring – Reentry

Objective: Ensure air quality for personnel and members of the public resuming normal activities within Battleship Texas

Analyte	Action Level	Action to be Taken	Basis	Instrument	Detection Limit	Notes	Correction Factor
VOCs	1 ppm 15 sec	Assess for the presence of benzene, Report reading to PM	To avoid over exposure to benzene	MultiRAE PID	0.1 ppm	Range: 1 – 5,000 ppm	NA
Benzene*	0.5 ppm 5 min	Exit Area; Report reading to PM; Document reading	OSHA PEL Action level/ACGIH TLV-TWA	UltraRAE PID	0.025 ppm	UltraRAE - Change SEP tube frequently	NA
LEL	1 %	Exit Area; Notify PM; Document reading	Changing Site Conditions	MultiRAE Sensor	1 %	Measuring range: 1 – 100%	2.6

* Note that this analyte is detectible on the MultiRAE PID with the following correction factor: Benzene (0.47).